

**PROJECT IMPLEMENTATION PLAN
HAZARDOUS INFLIGHT WEATHER ADVISORY SERVICE**



May 18, 1989

**U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION**

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Initiated By: APS-540

RECORD OF CHANGES

DIRECTIVE NO.

6620 3

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FOREWORD

This order sets forth the Project Implementation Plan (PIP) for planning and implementing the Hazardous Inflight Weather Advisory Service (HIWAS). This order provides management direction and technical guidance to all levels of the FAA in the implementation of the project, from project inception through equipment deployment.

A handwritten signature in black ink, appearing to read "Robert E. Brown". The signature is fluid and cursive, with the first name "Robert" being more prominent and the last name "Brown" following in a similar style.

Robert E. Brown
Director, Program Engineering Service

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CHAPTER 1. GENERAL

1 PURPOSE. This project implementation plan provides overall guidance and direction for establishment of the Hazardous **Inflight** Weather Advisory Service (HIWAS) at flight advisory facilities.

2 DISTRIBUTION. This order is distributed to division level in the Program Engineering, Systems Maintenance, Air Traffic Operations, Air Traffic Plans and Requirements, and Acquisition Materiel Services in Washington headquarters; to branch level in regional Airway Facilities divisions; to branch level in the FAA Academy and FAA Depot at the Mike Monroney Aeronautical Center; to branch level in the Facilities and Engineering Divisions at the FAA Technical Center; and standard distribution to all Airway Facilities field offices.

3. AUTHORITY TO CHANGE THIS ORDER.

a. This plan is issued under the authority of the Director, Program Engineering Service, APS-1. The authority to issue changes to this order is reserved for APS-1.

b. Applicability. The information contained herein will be used by FAA offices, services, regions, centers (Mike Monroney Aeronautical Center and FAA Technical Center) for their support of the Hazardous **Inflight** Weather Advisory Service implementation activities. The guidance and schedule information provided herein forms the framework for detailed planning activities required at the regional and sector levels.

c. Duration. The duration of this project will continue until the last system has been deployed. ,

4.-19. RESERVED.

CHAPTER 2. PROJECT OVERVIEW

20 SYNOPSIS. The National Airspace System (NAS) Plan Project 03-08, Hazardous Inflight Weather Advisory Service (HIWAS), will provide continuous prerecorded broadcasts of weather advisories. These weather advisory broadcasts contain information pertaining to other than sedentary meteorological conditions. A broadcast network will be established utilizing the analog voice capabilities of existing, geographically dispersed very high frequency omnidirectional range (VOR) stations.' This document provides management direction, program reference material, and project guidelines for implementing the HIWAS project.

21. PURPOSE.

a. HIWAS is a component of the Flight Service Modernization Program (FSMP) HIWAS facilities will advise the aircraft pilot and flight crews of meteorological conditions posing a threat to all types of aircraft. This voice information broadcast will be continually updated. The origination time of each update will be part of the broadcast; thus the users will gain insight as to the currency of the information. The HIWAS will be a nationwide service providing both local and regional weather conditions. Facilities will provide broadcast coverage at altitudes of 4,000 feet above ground level and upward.

b Weather Products contained in HIWAS voice broadcasts include the following advisories and reports:

(1) Severe Weather Watch Alerts (AWW) provide information concerning active severe weather watches affecting the broadcast area.

(2) Significant Meteorological Information (SIGMET) advisories contain information on non-convective weather phenomena that is considered hazardous to all types of aircraft.

(3) Convective SIGMET (WST) reports contain current and near term information on thunderstorms and related phenomena, e.g., severe or greater turbulence, severe icing, low level wind shear, etc.

(4) Center Weather Advisories (OWA) are weather advisories containing information relating to hazardous weather occurring or expected to occur within a specific air route traffic control center (ARTCC) area.

(5) Airman's Meteorological Information (AIRMET) advisories, which denote less severe weather conditions than SIGMET products, represent meteorological conditions which are potentially hazardous to light aircraft.

(6) Urgent Pilot Weather Reports (UUA) contain reports from en/route aircraft relating to hazardous weather conditions observed in flight.

22. HISTORY.

a. Previous methods of dissemination of the information contained in SIGMETs, convective SIGMETs, AIRMETs, and Notices to Airmen (NOTAMs) have been provided by existing weather advisory services. These services include:

- (1) Transcribed Weather Broadcasts (TWEBs)
- (2) Pilot Automatic Telephone Weather Answering Service (PATWAS)
- (3) Telephone Information Briefing System (TIBS)
- (4) Automated Weather Observation System (AWOS)
- (5) **Enroute** Flight Advisory Service (EFAS)
- (6) In-Flight Weather Advisory Broadcasts.

b. Some of the above services overlap and/or share the transmission media of others. There is currently no method whereby all pilots in flight can be assured of receiving urgent information expeditiously. **HIWAS** will provide this service.

23.-29. RESERVED.

CHAPTER 3. PROJECT DESCRIPTION

30 FUNCTIONAL DESCRIPTION. HIWAS is a component of the air-to-ground (a-g) communications system providing weather information to civil and military aircraft. The basic components of HIWAS are the single-channel digital recorder (SCDR) system and the very high frequency omnidirectional range (VOR) transmitter. The recorder system is located at a control facility (flight service station (FSS) or automated flight service station (AFSS)) with its output connected to the audio line of one or more selected VORs. About 550 VOR transmitters are controlled by one of the approximately 300 FSS facilities. Approximately 110 HIWAS systems are to be installed at currently operating flight advisory control facilities. The HIWAS broadcast network will be formed by utilizing the existing leased landlines which connect the control facility with remote sites.

a. HIWAS information will be obtained from the existing Aviation Weather System (AWS). AWS is a collection of functionally independent elements, each developed and implemented as a solution to a specific operational problem.

b. Voice messages to be broadcast via HIWAS will be generated at the flight service station. Figure 3-1 depicts the initial flow of weather information between the flight service specialist and the inflight pilot. The voice message will be recorded manually.

31. PHYSICAL DESCRIPTION.

a. The HIWAS system equipment uses solid-state SCDRs. Voice messages are stored in digital form in core memory during the record mode. The messages are in turn retrieved from the core memory module, and binary digital information is converted to analog speech during the playback mode. Recorder units have no mechanical components and therefore require minimal maintenance. Each SCDR system contains two SCDRs, one monitor alarm panel (MAP), and one dual remote control unit (RCU), as depicted in figure 3-2. Figure 3-3 depicts the HIWAS system configuration.

(1) Each recorder, as supplied, contains 30 seconds of message time. A maximum of 6 minutes of recorded message time can be obtained by addition of plug-in memory modules. Operating and control characteristics are similar to an analog mechanical device, with the exception that there are no moving parts. Changing messages is accomplished electronically by recording over a previous message.

(2) Recorders are supplied with solid-state device memory cards. Each card provides 30 seconds of record/playback time. The recorders can accept up to 12 memory cards for a maximum of 6 minutes of recording capability.

(3) The digital recorders are designed for remote control operation within the same building. The individual remote control unit provides the required control functions, up to a distance of 500 feet, and is usually installed in the operator console. The recorders and the MAP are standard "D" panel size, and are designed for equipment rack mounting in the equipment room.

FIGURE 3-1. WEATHER INFORMATION FLOW

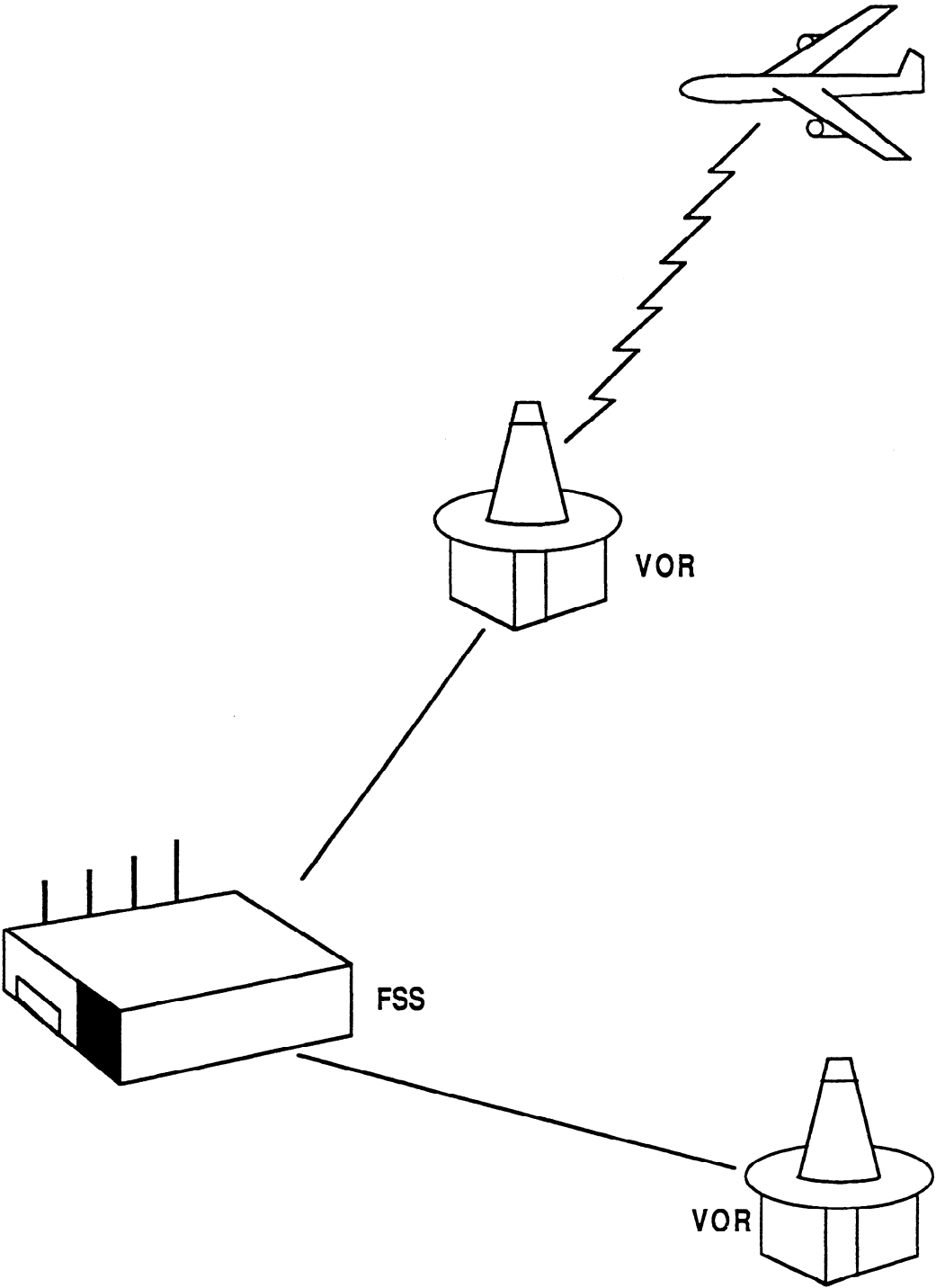


FIGURE 3-2. HIWAS EQUIPMENT

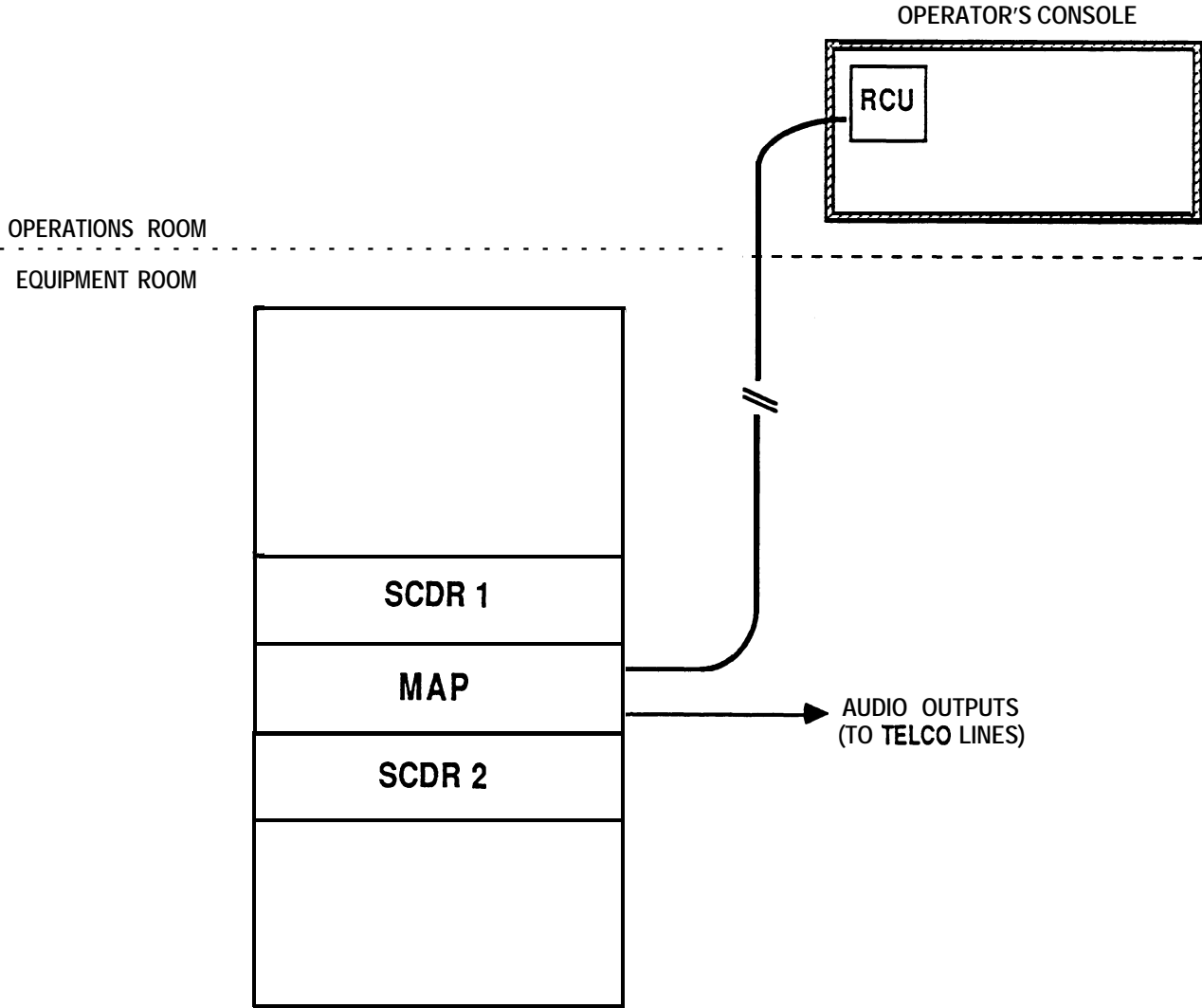
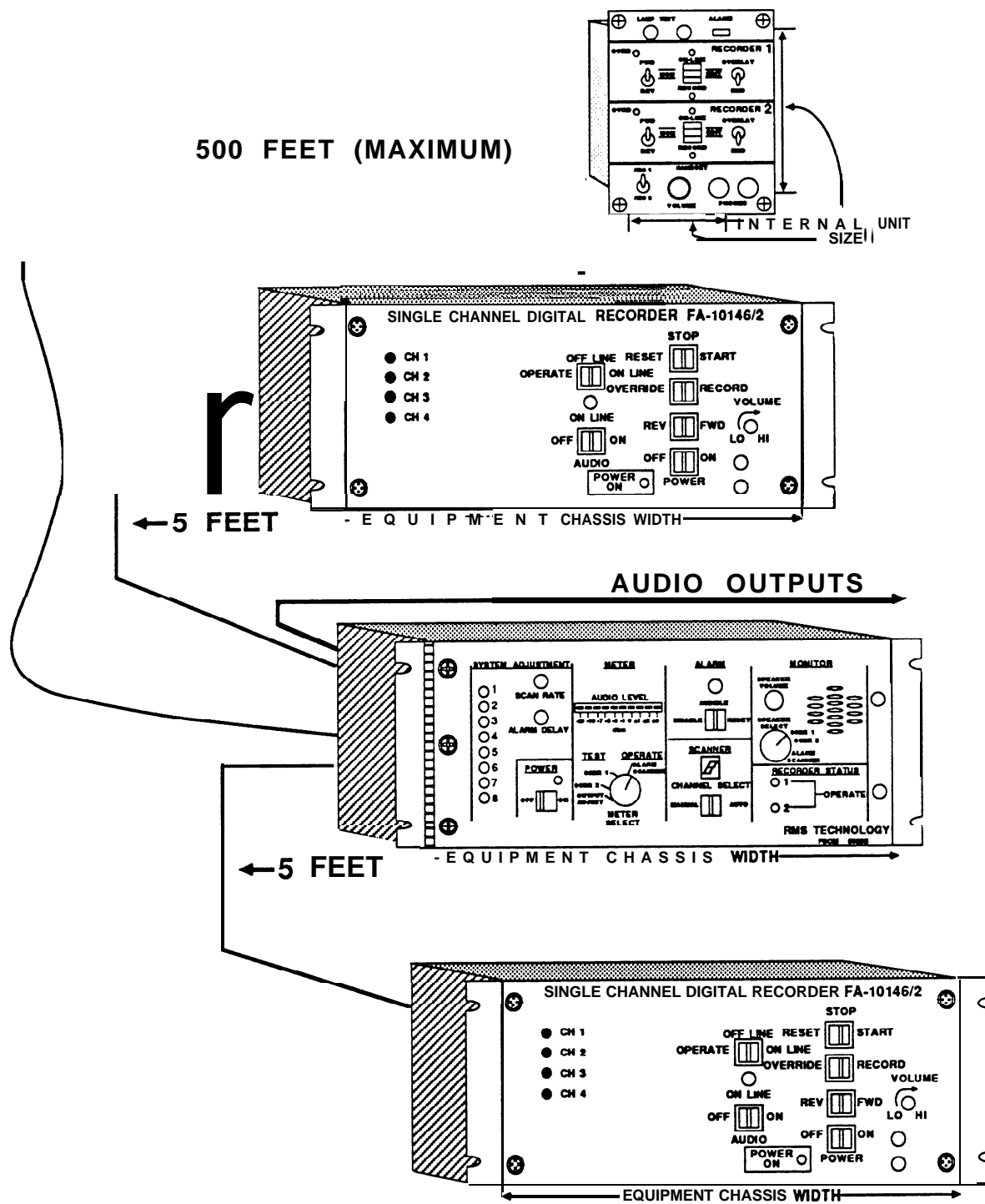


FIGURE 3-3. HIWAS EQUIPMENT CONFIGURATION



(4) Each recorder is provided with a built-in float-charged backup battery system. Battery capacity provides a minimum of 20 minutes operation in the absence of alternating current (ac) power with no interruption of service.

(5) The SCDR system has an override feature for LIVE announcements by the operator.

b. Transmitters used to broadcast the **HIWAS** messages to pilots will be selected from existing VOR facilities. The primary function of the VOR is to provide radio signals for navigational purposes. A secondary purpose of the VOR is to provide a-g communications. This secondary function is presently used as an outlet for transcribed weather broadcasts at selected VOR stations.

c. A broadcast network which will be controlled by the FSS or AFSS will be made up of **VORs**. In the initial stages of **HIWAS** implementation, this network may consist of numerous FSS control facilities connected to only one or two **VORs**. As FSS facilities are consolidated into the planned **AFSSs**, the broadcast network of each control facility will expand. No new **VORs** are planned as a direct result of **HIWAS** implementation. New **VORs** or relocations will not be influenced by **HIWAS** requirements.

32 PROJECT REQUIREMENTS. The **HIWAS** equipment will consist of two SCDRs, the MAP, and the RCU at the control facility, connected via audio circuits to the VOR transmitter at the remote site.

a. The SCDRs and the MAP will be mounted in the communications equipment room rack at the control facility. One to eight outputs from the MAP will be connected to the appropriate VOR audio circuits at the telephone demarcation panel.

b. The MAP will be mounted between the two SCDRs in the equipment room. The MAP unit will provide all control, alarm, and switching functions for the system. This unit has been designed to assist maintenance personnel in fault isolation in the event of equipment failure.

c. The RCU normally will be mounted at the operator's console to allow the FSS specialist to record and transmit **HIWAS** messages.

33. INTERFACES. Reserved.

34.-39. RESERVED.

CHAPTER 4. PROJECT SCHEDULE AND STATUS

40. PROJECT SCHEDULE AND GENERAL STATUS. Project schedules and status will be monitored by APS-540. HIWAS program schedule is sectioned into the following three areas; acquisition, production, and implementation.

41. MILESTONE SCHEDULE SUMMARY. The following is a summary of the schedule milestones.

a. The acquisition phase of this project began with the procurement request released in July 1985. The solicitation was issued in September 1985. Acquisition was concluded with contract award in February 1986.

b. The production phase began with the delivery of the provisioning technical documentation in July 1986. The first system was delivered to the FAA Depot in November 1987. Remaining systems were delivered during the following 8 month period. However, all systems were returned to the manufacturer for modification. Deliveries of equipment resumed in April 1989.

c. The implementation phase will begin with the first operational readiness date (ORD) and end when the last ORD is completed.

42. INTERDEPENDENCIES AND SEQUENCE. There is no relationship between this project and others in terms of scheduling and implementation sequencing.

43.-49. RESERVED.

CHAPTER 5. PROJECT MANAGEMENT

50. PROJECT MANAGEMENT, GENERAL. Program direction for the HIWAS project is provided by the FAA policies and procedures as defined by current FAA orders and directives, and by active direction from management at the FAA service director level.

a. The HIWAS project is now being implemented in accordance with the applicable provisions of Order 7110.92A, Hazardous Inflight Weather Advisory Service.

b. Overall responsibility for implementation of the HIWAS project has been assigned to the Director, Program Engineering Service, APS-1. This order directs the Facilities and Equipment (F&E) program manager assignments and program review procedures.

c. Policy direction and guidance for implementation of the HIWAS network project is provided by the following FAA orders and other documents:

- (1) Order 1000.1A, Policy Statement of the FAA.
- (2) Order 1100.1A, FAA Organization--Policies and Standards.
- (3) Order 1800.8E, National Airspace System Configuration Management.
- (4) Order 1800.58, National Airspace Integrated Logistics Support Policy.
- (5) Order 1810.1D, Major Systems Acquisition.
- (6) Order 4560.1A, Initial Provisioning for Support of Facilities, Facility Components, Aircraft, and Avionics Equipment.
- (7) Order 4620.36, Initial Support for New or Modified Equipment Installation.
- (8) Order 6000.30A, Policy for Maintenance of the National Airspace System (NAS).
- (9) Order 6030.45, Facility Reference Data File.
- (10) Order 6580.3, Installation Standards Handbook.
- (11) Order 7110.92A, Hazardous Inflight Weather Advisory Service (HIWAS).
- (12) NAS-MD-001, NAS Air Traffic Control Subsystem Baseline Configuration.

51. PROJECT MANAGEMENT RESPONSIBILITIES.

a. Director, Program Engineering Service, APS-1, has the overall responsibility for the implementation of the HIWAS network project and provides program direction.

- b. Program Office, APS-540, will develop, coordinate, and monitor the program from the engineering/development cycle through deployment.
 - c. Systems Plans and Programs Division, ATR-100, has the responsibility to establish requirements for the NAS.
 - d. Contracts Division ALG-300, is responsible for assigning the Contracting Officer (CO) to procure equipment for the program office.
 - e. Industrial Division, ALG-400, assigns the in-plant quality and reliability officer (QRO) to monitor the contractor's quality control program.
 - f. Maintenance Operations Division, ASM-200, will identify maintenance training requirements and request appropriate training courses and materials from cognizant organizations.
 - g. FAA Depot, AAC-400, will provide logistics and engineering support, including the establishment and maintenance of a spares inventory and provision of repairs for returned modules.
 - h. FAA Academy, AAC-900, will establish and maintain training courses for personnel responsible for maintenance of equipment delivered under this contract.
 - i. AAC Center Staff and Support Organizations will provide engineering, installation, and maintenance support for equipment provided to the FAA Academy for training.
 - j. National Airway Engineering Field Support Sector, ASM-150, will verify instruction books in conjunction with the program office and after commissioning of the last site will provide for maintenance of handbooks and maintenance support of field facilities.
 - k. Regional offices have responsibility for each designated site. This responsibility includes the site peculiar engineering and implementation activities of site preparation, installation, and checkout for operational turnover. The regional coordinator will act as a focal point for coordination and scheduling during the implementation of the HIWAS project.
52. PROJECT PROCEDURES. The HIWAS project will be implemented in accordance with existing FAA procedures, as defined in applicable orders.
- a. Implementation management requires the development of this Project Implementation Plan (PIP) to assure the orderly introduction of the production system into the NAS. Revisions, updates, and reissues of this plan will be disseminated by the project office.
 - b. Logistics support procedures established by Order 4620.3C, Initial Support for New or Modified Equipment Installation, and Order 1800.58, National Airspace Integrated Logistics Support Policy, will be used for providing the initial allowances of spares, supplies, and working equipments required for the operation and maintenance of new FAA facilities and equipment installations.

c. Configuration management will use the policies and procedures established by Order 1800.8E, National Airspace System Configuration Management, for the end items specified in NAS-MD-001, NAS Air Traffic Control Subsystem Baseline Configuration. The HIWAS system hardware baseline will be established in Order 6580.3, Installations Standards Handbook. Changes to this baseline, up to the date of initial site operational availability, will not require FAA change proposal activity, only concurrence by the project manager. Subsequent to initial site operational availability, all change proposals will be coordinated in accordance with Order 1800.8E.

53. PROJECT MANAGEMENT COMMUNICATIONS. The Voice Switching and Recording Program Manager (APS-540) is the focal point for all internal communications. In addition to direct interface with the program manager, the program must ensure that the necessary information is made available to the organization that has action responsibility.

a. Contractor communications are authorized for specific purposes, in accordance with FAA policy. The contracting officer (CO) has the direct contract responsibility and is responsible for all contractual matters. The CO is the only person authorized to approve changes that will impact price, delivery, or schedule.

(1) The CO has been designated in the Acquisition and Materiel Service, ALG-331. ALG-331 is the office responsible for all contractual matters.

(2) The program manager has been designated as the Manager, APS-540. A project manager has been designated from the APS-540 staff and will also be the technical officer (TO). Thus, APS-540 is authorized to interface with the contractor's representatives regarding technical issues.

54.-59. RESERVED.

CHAPTER 6. PROJECT FUNDING

60. PROJECT FUNDING STATUS, GENERAL. Implementation of the HIWAS project corresponds with policies and guidelines established in FAA Order 1810.1E, Major Systems Acquisition. The regions will implement the project in accordance with this order.

61. FUNDING POLICY. The funding policy of the project is to base all allocations on standard cost estimates. All costs relating to engineering, testing, installation, and contract monitoring, as well as the costs associated with site preparation and the initial logistic support, will be provided from HIWAS project funds.

62.-69. RESERVED.

CHAPTER 7. DEPLOYMENT

70. GENERAL DEPLOYMENT ASPECTS. Normal deployment of the Hazardous Inflight Weather Advisory Service (HIWAS) equipment will be made to the FAA Depot. The equipment will then be requisitioned from the Depot by the regions. Regions also have the option to request delivery directly to field facilities.

71. SITE PREPARATION. The government is required to provide certain services and equipment at each HIWAS site. The site preparation work required will be included in each engineering package issued by regional F&E branches prior to installation.

72. DELIVERY. Delivery to the FAA Depot will begin at the end of April 1989. The list below shows when systems will be made available for installation at facilities contained within each air route traffic control center (ARTCC) area.

<u>ARTCC Name (ID)</u>	<u>Date Available</u>
Jacksonville (ZJX)	6/9/89
Miami (ZMA)	6/9/89
Atlanta (ZTL)	6/9/89
Houston (ZHU)	6/9/89
Memphis (ZME)	6/9/89
Washington (ZDC)	6/9/89
New York (ZNY)	6/9/89
Boston (ZBW)	6/9/89
Indianapolis (ZID)	7/7/89
Cleveland (ZOB)	7/7/89
Chicago (ZAU)	7/7/89
Minneapolis (ZMP)	7/7/89
Kansas City (ZKC)	7/7/89
Fort Worth (ZFW)	7/7/89
Albuquerque (ZAB)	7/7/89
Denver (ZDV)	8/4/89
Salt Lake City (ZLC)	8/4/89
Los Angeles (ZLA)	8/4/89
Oakland (ZOA)	8/4/89
Seattle (ZSE)	8/4/89

73.-79. RESERVED.

CHAPTER 8. VERIFICATION

80. FACTORY VERIFICATION. Factory verification conducted prior to shipment of the equipment will follow the contractor's final test procedures.

81. CHECKOUT. The installation plan and test plan included in the instruction book will be used for checkout to verify the equipment operational capability.

82. CONTRACTOR INTEGRATION TESTING. Not Applicable.

83. CONTRACTOR ACCEPTANCE INSPECTION (CAI). Not Applicable.

84. FAA INTEGRATION TESTING. NAS integration testing was conducted during operational field tests of recorder systems at Patrick Henry Airport in Newport News, Virginia.

85. SHAKEDOWN. Recorder system integrity was verified during operational field tests.

86. JOINT ACCEPTANCE INSPECTION (JAI). Joint acceptance inspection will be performed in accordance with Order 6030.45, Facility Reference Data File, and any additional requirements specified by the regions.

87. -89. RESERVED.

CHAPTER 9. INTEGRATED LOGISTICS SUPPORT

90. MAINTENANCE CONCEPT. Maintenance on HIWAS equipment will be accomplished by FAA technicians. Site maintenance is limited to the detection, isolation, and replacement of faulty LRU's and repair or disposal as appropriate.

91. TRAINING. Directed study courses will be provided by AX-900 for maintenance personnel training.

92. SUPPORT TOOLS AND TEST EQUIPMENT. The existing standard set of maintenance tools is sufficient to support the recorder system.

93. SUPPLY SUPPORT. Supply support will be provided in accordance with Order 1800.58, National Airspace Integrated Logistics Support Policy. Provisioning will be accomplished in accordance with Order 4560.1A, Initial Provision for Support of Facilities, Facility Components, Aircraft, and Avionics Equipment.

94. VENDOR DATA AND TECHNICAL MANUALS. Copies of the instruction book will provide the test plan, maintenance plan, and operator instructions (Chapter 3, Operation), and will be delivered with each system.

95. EQUIPMENT REMOVAL. Not Applicable.

96. FACILITIES. Deployment of Hazardous Inflight Weather Advisory Service (HIWAS) equipment will not adversely affect facility operation.

97.-99. RESERVED.

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HIWAS FACILITY DATABASE SUMMARY

DEPLOYMENT PRIORITY	ARTCC AREA	NO. OF SYSTEMS
1	Jacksonville (ZJX)	6
2	Miami (ZMA)	3
3	Atlanta (ZTL)	13
4	Houston (ZHU)	4
5	Memphis (ZME)	7
6	Washington (ZDC)	5
7	New York (ZNY)	5
8	Boston (ZBW)	5
9	Indianapolis (ZID)	2
10	Cleveland (ZOB)	2
11	Chicago (ZAU)	4
12	Minneapolis (ZMP)	7
13	Kansas City (ZKC)	4
14	Fort Worth (ZFW)	5
15	Albuquerque (ZAB)	3
16	Denver (ZDV)	7
17	Salt Lake City (ZLC)	7
18	Los Angeles (ZLA)	7
19	Oakland (ZOA)	7
20	Seattle (ZSE)	3
Total HIWAS Field Systems		106
1	FAA Academy (AAC-492D)	4
2	FAA Headquarters (APS-540)	1
3	FAA Depot (AAC-485A)	10
4	FAA Depot (AAC-440)	1
5	AF Eng. Field Support (ASM-150)	1
6	FAA Technical Center (ACN-140)	1
7	FAA Academy (AAC-482B)	7
Total Training & Support Systems		25
Total HIWAS Systems		131

***** HIWAS DATABASE GROUPED BY ARTCC *****

JACKSONVILLE ARTCC AREA

CNTL	FACILITY	ST REG	REMOTE	SITE	ST
AND	ANDERSON	SC SO	CAE	COLUMBIA	SC
			CHS	CHARLESTON	SC
			FLO	FLORENCE	SC
CEW	CRESTVIEW	FL so	CEU	CRESTVIEW	FL
DHN	DOTHAN	AL SO	RRS	DOTHAN	AL
GNV	GAINESVILLE	FL SO	CTY	CROSS CITY	FL
MCN	MACON	GA so	ABY	ALBANY	GA
			ALD	ALLENDAL	SC
			ALMA	ALMA	GA
			SAV	SAVANNAH	GA
TLH	TALLAHASSEE	FL SO	TLH	TALLAHASSEE	FL

***** HIWAS DATABASE GROUPED BY ARTCC *****

MIAMI ARTCC AREA

CNTL	FACILITY	ST REG	REMOTE	SITE	ST
GNV	GAINESVILLE	FL SO	OCF	OCALA	FL
MIA	MIAMI	FL SO	EYU	KEY WEST	FL
			FMY	FORT MYERS	FL
			MIA	MIAMI	FL
			PHK	PAHOKEE	FL
PIE	ST PETERSBURG	FL SO	ORL	ORLANDO	FL
			PIE	ST PETERSBURG	FL
			VRB	VERO BEACH	FL

***** HIWAS DATABASE GROUPED BY ARTCC *****

ATLANTA ARTCC AREA

CNTL	FACILITY	ST REG	REMOTE	SITE	ST
ANB	ANNISTON	AL SO	MGM	MONTGOMERY	AL
			VJZ	VULCAN	AL
AND	ANDERSON	SC so	FML	FORT MILL	SC
			GRD	GREENWOOD	SC
ATL	ATLANTA	GA so	AHN	ATHENS	GA
			RMG	ROME	GA
BLF	BLUEFIELD	WV EA	GZG	BLACKFORD	VA
			PSK	DUBLIN	VA
BNA	NASHVILLE	TN SO	CHA	CHATTANOOGA	TN
			HCH	HINCH MTN	TN
CRU	CHARLESTON	WV EA	BKW	BECKLEY	WV
DHN	DOTHAN	AL SO	EUF	EUFAULA	AL
HKY	HICKORY	NC SO	BZM	BARRETT MTN	NC
LOU	LOUISVILLE	KY SO	LOZ	LONDON	KY
MCN	MACON	GA so	DBN	DUBLIN	GA
			HRS	YOUNG HARRIS	GA
			LGC	LAGRANGE	GA
MOB	MOBILE	AL SO	MVC	MONROEVILLE	AL
RDU	RALEIGH	NC SO	GSO	GREENSBORO	NC
			SUG	ASHEVILLE	NC
TYS	KNOXVILLE	TN SO	TYS	KNOXVILLE	TN

***** HIWAS DATABASE GROUPED BY ARTCC *****

HOUSTON ARTCC AREA

CNTL	FACILITY	ST REG	REMOTE	SITE	ST
CXO	CONROE	TX SW	BPT	BEAUMONT	TX
			CLL	COLLEGE STATION	TX
			IAH	HOUSTON	TX
			LFK	LUFKIN	TX
			PSX	PALACI OUS	TX
DRI	DE RIDDER	LA SW	AEX	ALEXANDRIA	LA
			LFT	LAFAYETTE	LA
			MSY	NEW ORLEANS	LA
GWO	GREENWOOD	MS SO	GPT	GULFPORT	MS
			MC8	MCCOMB	MS
SJT	SAN ANGELO	TX SW	COT	COTULLA	TX
			CRP	CORPUS CHRIST1	TX
			HRL	HARLINGEN	TX
			JCT	JUNCTION	TX
			LLO	LLANO	TX
			LRD	LAREDO	TX
			SAT	SAN ANTONIO	TX

•  HIUAS DATABASE GROUPED BY ARTCC *****

MEMPHIS ARTCC AREA

CNTL	FACILITY	ST REG	REMOTE	SITE	ST
ANB	ANNISTON	AL SO	HAB	HAMILTON	AL
			RQZ	ROCKET	AL
GWO	GREENWOOD	MS SO	GLH	GREENVILLE	MS
			IGB	BIGBEE	MS
			MEI	MERIDIAN	MS
JAN	JACKSON	MS SO	JAN	JACKSON	MS
LIT	LITTLE ROCK	AR SW	ARG	UALNUT RIDGE	AR
			FLP	FLIPPIN	AR
			FSM	FT SMITH	AR
			HOT	HOT SPRINGS	AR
			PBF	PINE BLUFF	AR
LOU	LOUISVILLE	KY SO	BUG	BOUL ING GREEN	KY
			CNG	CUNN INGHAM	KY
MKL	JACKSON	TN SO	DYR	DYERSBURG	TN
			GHM	GRAHAM	TN
			HLI	HOLLY SPR I NGS	MS
STL	CHESTERF I ELD	MO CE	MAW	MALDEN	MO

• 0000 HIUAS DATABASE GROUPED BY ARTCC *****

UASHINGTON ARTCC AREA

CNTL	FACILITY	ST REG	REMOTE	SITE	ST
DCA	LEESBURG	VA EA	EMI	UESTMINSTER	MD
			GVE	GORDENSVILLE	VA
			HPU	HOPEUELL	VA
			LYH	LYNCHBURG	VA
			OTT	NOTT I NGHAM	MD
EKN	ELKINS	W EA	EKN	ELKINS	w
EUN	NEW BERN	NC SO	ECG	ELIZABETH CITY	NC
			ILM	WILMINGTON	NC
PHF	NEUPORT NEUS	VA EA	ccv	CAPE CHARLES	VA
RDU	RALEIGH DURHAM	NC SO	FAY	FAYETTEVILLE	NC
			TYI	TAR RIVER	NC

HIUAS DATABASE GROUPED BY ARTCC

• 24x24

NEW YORK ARTCC AREA

CNTL	FACILITY	ST REG	REMOTE	SITE	ST
ELM	ELMIRA	NY EA	ELM	ELMIRA	NY
IPT	UILLIAMSPORT	PA EA	AVP	UULKES-BARRE	PA
			MXE	MODENA	PA
			SEG	SELINGSGROVE	PA
ISP	NEU YORK	NY EA	HTO	HAMPTON	NY
MIV	MILLVILLE	NJ EA	SBJ	SOLBERG	NJ
			SIE	SEA ISLE	NJ
POU	PWGHKEPSIE	NY EA	HNK	HANCOCK	NY
			PWL	PAWLING	NY

***** HIUAS DATABASE GROUPED BY ARTCC *****

BOSTON ARTCC AREA

CNTL	FACILITY	ST REG	REMOTE	SITE	ST
BDR	BRIDGEPORT	CT NE	HFD	HART FORD	CT
			HYA	HYANN I S	MA
			PVD	PROVIDENCE	RI
BGR	BANGOR	ME NE	BGR	BANGOR	ME
			BML	BERLIN	NH
			ENE	KENNEBUNK	ME
			PQI	PRESQUE ISLE	ME
BRL	BURLINGTON	VT NE	BTV	BURLINGTON	VT
			CAM	CAMBRIDGE	NY
			MSS	MASSENA	NY
BUF	BUFFALO	NY EA	DNY	DELANCEY	NY
			SYR	S Y R A C U S E	NY
POU	PWGHKEEPSIE	NY EA	IGN	KINGSTON	NY

***** HIUAS DATABASE GROUPED BY ARTCC *****

INDIANAPOLIS ARTCC AREA

CNTL	FACILITY	ST REG	REMOTE	SITE	ST
.....					
DAY	DAYTON	OH GL	APE	APPLETON	OH
			DAY	DAYTON	OH
HUF	TERRE HAUTE	IN GL	ABB	NABB	IN
			BVT	LAFAYETTE	IN
			PXV	EVANSVILLE	IN
			TTH	TERRE HAUTE	IN
			SHB	SHELBYVILLE	IN

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CLEVELAND ARTCC AREA

CNTL	FACILITY	ST REG	REMOTE	SITE	ST
CLE	CLEVELAND	OH GL	CTW	NEWCOMERSTOWN	OH
			DJB	CLEVELAND	OH
			YNG	YOUNGSTOWN	OH
LAN	LANSING	MI GL	CRL	CARLETON	MI
			ECK	PECK	MI
			MBS	SAG1 NAU	MI

***** HIUAS DATABASE GROUPED BY ARTCC *****

CHICAGO ARTCC AREA

CNTL	FACILITY	ST REG	REMOTE	SITE	ST
FOD	FORT DODGE	IA CE	ALO	WATERLOO	IA
			CVA	DAVENPORT	IA
			OTM	OTTUMWA	IA
GRB	GREEN BAY	WI GL	ETB	WEST BEND	WI
			GRB	GREEN BAY	WI
			LNR	LONE ROCK	WI
			STE	STEVENS POINT	WI
IKK	KANKAKEE	IL GL	BRL	BURLINGTON	IA
			ORD	O'HARE	IL
			PLL	POLO	IL
			PNT	PONTIAC	IL
LAN	LANSING	MI GL	MKG	MUSKEGON	MI

***** HIUAS DATABASE GROUPED BY ARTCC *****

MINNEAPOLIS ARTCC AREA

CNTL	FACILITY	ST REG	REMOTE	SITE	ST
FOD	FORT DODGE	IA CE	DSM	DES MOINES	IA
			FOD	FORT DODGE	IA
			LMN	LAMONI	IA
			OMA	OMAHA	NE
			sux	SIWX CITY	IA
GFK	GRAND FORKS	ND GL	BIS	BISMARCK	ND
			DIK	DICKINSON	ND
			DVL	DEVILS LAKE	ND
			FAR	FARGO	ND
			GFK	GRAND FORKS	ND
			JMS	JAMESTOUN	ND
			MOT	MINOT	ND
GRB	GREEN BAY	WI GL	CMX	HOUGHTON	MI
			EAU	EAU CLAIRE	WI
			ESC	ESCANABA	MI
			IUD	I RONUOOO	MI
			RHI	RHINELANDERR	WI
			RZN	SIREN	WI
HON	HURON	SD GL	ATY	UATERTOUN	SD
			DPR	DUPREE	SD
			FSD	SI OUX FALLS	SD
			MHE	MITCHELL	SD
			PIR	PIERRE	SD
LAN	LANSING	MI GL	APN	ALPENA	MI
			PLN	PELLSTON	MI
			TVC	TRAVERSE CITY	MI
OLU	COLUMBUS	NE CE	HSI	HASTINGS	NE
			OLU	COLUMBUS	NE
			ONL	O'NEIL	NE
			PWE	PAWNEE	NE
PNM	PRINCETON	MN GL	AXN	ALEXANDRIA	MN
			BJI	BEMIDJI	MN
			EGT	FARMINGTON	MN
			HIB	HIBBING	MN
			INL	INTERNATIONAL FALLS	MN
			RST	ROCHESTER	MN
			RUF	REDWOOD FALLS	MN

***** HIUAS DATABASE GROUPED BY ARTCC *****

KANSAS CITY ARTCC AREA

CNTL	FACILITY	ST REG	REMOTE	SITE	ST
COU	COLUMBIA	MO CE	BUM	BUTLER	MO
			COU	COLUMBIA	MO
			IRK	KIRKSVILLE	MO
			HAP	MAPLES	MO
			MKC	KANSAS CITY	MO
			SGF	SPRINGFIELD	MO
ICT	WICHITA	KS CE	DDC	DODGE CITY	KS
			EMP	EMPORIA	KS
			HYS	HAYS	KS
			ICT	WICHITA	KS
			LBL	L I BERAL	KS
			MHK	MANHATTAN	KS
			OSW	OSWEGO	KS
			SLN	SAL I WA	KS
MLC	MCALESTER	OK SW	GAG	GAGE	OK
sus	CHESTERFIELD	MO CE	CAP	CAPITAL	IL
			ENL	CENTRAL IA	IL
			FAM	FARMINGTON	MO
			STL	ST. LOUIS	MO
			UIN	QUINCY	IL

***** HIJAS DATABASE GROUPED BY ARTCC *****

FORT WORTH ARTCC AREA

CNTL	FACILITY	ST REG	REMOTE	SITE	ST
DRI	DE RIDDER	LA SW	EMG	SHREVEPORT	LA
			MLU	MONROE	LA
FTU	FORT WORTH	TX SU	ABI	ABI LENE	TX
			ACT	WACO	TX
			BPR	BRIDGEPORT	TX
			BUJ	BLUE RIDGE	TX
			CDS	CHILDRESS	TX
			LBB	LUBBOCK	TX
LIT	LITTLE ROCK	AR SW	TXK	TEXARKANA	AR
MLC	MCALESTER	OK SW	MLC	MCALESTER	OK
SJT	SAN ANGELO	TX SW	FST	FORT STOCKTON	TX
			MAF	MIDLAND	TX

***** HIUAS DATABASE GROUPED BY ARTCC *****

ALBUQUERQUE ARTCC AREA

CNTL	FACILITY	ST REG	REMOTE	SITE	'ST
ABQ	ALBUQUERQUE	NM SW	ABQ	ALBUQUERQUE	NM
			CIM	CIMARRON	NM
			CNX	CORONA	NM
			DUN	DEMING	NM
			LVS	LAS VEGAS	NM
			MRF	MARFA	TX
			ROW	ROSUELL	NM
			SFL	SALT FLAT	TX
			TCC	TUCUMCAR I	NM
			TCS	TRUTH OR CONSEQUENCES	NM
			ZUN	ZUN I	NM
FTU	FORT WORTH	TX SW	AMA	AMARILLO	TX
			DHT	DALHART	TX
PRC	PRESCOTT	A2 UP	INU	WINSLOW	A2
			PHX	PHOENIX	A2
			SSO	SAN SIMON	AZ
			TUC	TUCSON	AZ

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DENVER ARTCC AREA

CNTL	FACILITY	ST REG	REMOTE	SITE	ST
ABQ	ALBUQUERQUE	NM SW	FUN .	FARM1 NGTON	NM
CPR	CASPER	WY NM	CKW	CHEROKEE	WY
			CPR	CASPER	WY
			CYS	CHEYENNE	WY
			ECS	NEUCASTLE	WY
			GCC	GILLETTE	WY
			MBW	MEDICINE BOW	UA
DEN	DENVER	CO NM	AKO	AKRON	CO
			ALS	ALAMOSA	CO
			CHE	HAYDEN	CO
			DBL	RED TABLE	CO
			DEN	DENVER	CO
			DRO	DURANGO	CO
			DVC	DOVE CREEK	CO
			HGO	HUGO	CO
			MTJ	MONTROSE	CO
			RLG	KREMML I NG	CO
			TBE	TOBE	CO
HOW	HURON	SD GL	PHP	PHILLIP	SD
ICT	UICHITA	KS CE	GLD	GOODLAND	KS
			HLC	HILL CITY	KS
OLU	COLUMBUS	NE CE	ANU	AINSWORTH	NE
			CDR	CHADRON	NE
			LBF	NORTH PLATTE	NE
			SNY	SIDNEY	NE
PRS	PRESCOTT	A2 UP	TBC	TUBA CITY	A2

***** HIWAS DATABASE GROUPED BY ARTCC *****

SALT LAKE ARTCC AREA

CNTL	FACILITY	ST REG	REMOTE	SITE	ST
BOI	BOISE	ID NM	BOI	BOISE	ID
			DBS	DUB01 SE	ID
			LKT	SALMON	ID
			MLD	MALAD CITY	ID
			MYL	MCCALL	ID
			PIH	POCATELLO	ID
			TWF	TUIN FALLS	ID
CDC	CEDAR CITY	UT NM	BCE	BRYCE CANYON	UT
			CDC	CEDAR CITY	UT
			DTA	DELTA	UT
			FFU	FAIRFIELD	UT
			HVE	HANKSVILLE	UT
			OGD	OGDEN	UT
			PUC	PRICE	UT
			VEL	VERNAL	UT
CPR	CASPER	WY NM	BPI	BIG PINEY	WY
			COD	CODY	WY
			FBR	FT. BRIDGER	WY
			JAC	JACKSON	WY
			RIU	RIVERTON	WY
			RKS	ROCK SPRINGS	WY
			RLY	WORLD	WY
			SHR	SHERIDAN	WY
GFK	GRAND FORKS	ND GL	ISN	UILLISTON	ND
GTF	GREAT FALLS	MT NM	BIL	BILLINGS	MT
			BZN	BOZEMAN	MT
			CTB	CUTBANK	MT
			DLN	DILLON	MT
			FCA	KALISPELL	MT
			GGW	GLASGOW	MT
			GTF	GREAT FALLS	MT
			HLN	HELENA	MT
			HVR	HAVRE	MT
			LVM	LIVINGSTON	MT
			LWT	LEWISTOWN	MT
			MLS	MILES CITY	MT
			MSO	MISSOULA	MT
MMV	MCMINNVILLE	OR NM	BKE	BAKER	OR
			ILR	WILDHORSE	OR
			REO	ROME	OR
RNO	RENO	NV UP	BAM	BATTLE MT.	NV
			ELY	ELY	NV
			ILC	WILSON CREEK	NV
			LWL	WELLS	NV
			TPH	TONOPAH	NV
			SDO	SW HOUSE	NV

***** HIUAS DATABASE GROUPED BY ARTCC *****

LOS ANGELES ARTCC AREA

CNTL	FACILITY	ST REG .	REMOTE	SITE	ST
BFL	BAKERSFIELD	CA WP	EHF	SHAFTER	CA
HHR	HAWTHORNE	CA UP	PRB	PASO ROBLES	CA
			SLI	SEAL BEACH	CA
PRS	PRESCOTT	A2 UP	EED	NEEDLES	AZ'
			PGA	PAGE	A2
			PGS	PEACH SPRINGS	A t
RAL	RIVERSIDE	CA UP	BLH	BLYTHE	CA
			DAG	DAGGETT	CA
RNO	RENO	NV WP	BLD	BOULDER CITY	NV
			BTY	BEATTY	CA
			MMM	MORMAN MESA	NV
SBA	SANTA BARBARA	CA WP	RZS	SAN MARCOS	CA
SDM	SAN DIEGO	CA WP	JLI	JULIAN	CA

• ********* HIUAS DATABASE GROUPE BY ARTCC *********

OAKLAND ARTCC AREA

CNTL	FACILITY	ST REG	REMOTE	SITE	ST
FAT	FRESNO	CA UP	FRA	FRIANT	CA
OAK	OAKLAND	CA UP	ENI OAK	MENDOCINO OAKLAND	CA CA
RAL	RIVERSIDE	CA UP	BIH	BISHOP	CA
RBL	RED BLUFF	CA UP	RDD	REDO I NG	CA
RNO	RENO	NV UP	LOL W A LTA	LOVELOCK MINA LAKE TAHOE	NV NV NV
SAC	SACRAMENTO	CA WP	ILA	WILLIAMS	CA
SNS	SAL I NAS	CA UP	SNS	SAL I NAS	CA

***** HIUAS DATABASE GROUPED BY ARTCC *****

SEATTLE ARTCC AREA

CNTL	FACILITY	ST REG	REMOTE	SITE	ST
BOI	BOISE	ID NM	COE	COEUR D'ALENE	ID
			MLP	MULLAN	ID
MMV	MCMINNVILLE	OR NM	AST	ASTORIA	OR
			EUG	EUGENE	OR
			IMB	KIMBERLY	OR
			LKV	LAKEVIEW	OR
			LMT	KLAMATH FALLS	OR
			MFR	MEDFORD	OR
			OTH	NORTH BEND	OR
			PDT	PENDLETON	OR
			RDM	REDMOND	OR
			UBG	NEUBERG	OR
SEA	SEATTLE	WA NM	BLI	BELLINGHAM	WA
			DLS	THE DALLES	OR
			EAT	WENATCHEE	WA
			ELN	ELLENSBURG	WA
			GEG	SPOKANE	UA
			HQM	HOQUIAM	UA
			MWH	HOSES LAKE	UA
			OLM	OLYMPIA	WA
			PUW	PULLMAN	UA
			TOU	TATOOSH	UA